the commutator having a plurality of circumferential segments and the first and second brush bodies being capable of contacting a single one of said segments simultaneously when the assembly is mounted in the motor,

each arm in combination with the respective brush body thereof having a different respective natural resonance frequency of oscillation;

wherein said first and second support arms have different respective resiliencies so as to have said different frequencies;

[A brush assembly as in claim 47,] wherein parts of said first and second support arms are made of different materials so as to provide said different respective resiliencies.

~~50. (Amended) An electric motor brush assembly for~~ being mounted in a DC electric motor, comprising:

first and second resilient, electrically conductive support arms arranged for being axially spaced from each other with respect to a longitudinal axis of said DC electric motor when said assembly is mounted in the motor,

the support arms being connected electrically in parallel,

each arm carrying a respective brush body, said brush bodies being arranged for contacting a generally cylindrical commutator of the motor,

the commutator having a plurality of circumferential segments and the first and second brush bodies being capable of contacting a single one of said segments simultaneously when the assembly is mounted in the motor,

each arm in combination with the respective brush body thereof having a different respective natural resonance frequency of oscillation;

wherein said first and second support arms have different respective resiliencies so as to have said different frequencies;

H2 cont.

[A brush assembly as in claim 47,] wherein at least one of said first and second support arms has an aperture formed ~~therein for providing said different respective resiliencies~~.

Sub I3 H3

52. (Amended) In combination, an electric motor brush assembly and a DC electric motor, the brush assembly comprising:

first and second resilient, electrically conductive support arms arranged for being axially spaced from each other with respect to a longitudinal axis of said DC electric motor when said assembly is mounted in the motor,

the support arms being connected electrically in parallel,

each arm carrying a respective brush body, said brush bodies being arranged for contacting a generally cylindrical commutator of the motor,

the commutator having a plurality of circumferential segments and the first and second brush bodies being capable of contacting a single one of said segments simultaneously when the assembly is mounted in the motor,

each arm in combination with the respective brush body thereof having a different respective natural resonance frequency of oscillation; and

said [a] direct current electric motor comprising: [having]

said generally cylindrical commutator, and said first and second [having the] brush bodies being in contact therewith [assembly according to claim 43].

I Sub I1 cont.

53. (Amended) A brush assembly as in claim ~~43~~ 48, wherein said two brush bodies, having said different resonant frequencies, [enable the two brush bodies to provide] remain in reliable electrical contact between said first and second support arms and said commutator, thereby [by] reducing interface resistance between the brush bodies and the commutator, despite oscillations of said arms and brush bodies which occur in response to rotation of said commutator.

56. (Amended) A brush assembly as in claim 55, wherein said third and fourth brush bodies, having said different resonant frequencies, [enable the third and fourth brush bodies to provide] remain in reliable electrical contact between said third and fourth support arms and said commutator, thereby [by] reducing interface resistance between the brush bodies and the commutator, despite oscillations of said arms and brush bodies which occur in response to rotation of said commutator.

58. (Amended) In combination, an electric motor brush assembly and a DC electric motor, the brush assembly comprising:

first and second resilient, electrically conductive support arms arranged for being axially spaced from each other with respect to a longitudinal axis of said DC electric motor when said assembly is mounted in the motor,

the support arms being connected electrically in parallel,

each arm carrying a respective brush body, said brush bodies being arranged for contacting a generally cylindrical commutator of the motor,

the commutator having a plurality of circumferential segments and the first and second brush bodies being capable of contacting a single one of said segments simultaneously when the assembly is mounted in the motor,

each arm in combination with the respective brush body thereof having a different respective natural resonance frequency of oscillation; and

third and fourth resilient, electrically conductive support arms arranged for being axially spaced from each other with respect to said longitudinal axis of said DC electric motor when said assembly is mounted in the motor, said third and fourth support arms being connected electrically in parallel, and carrying respective third and fourth brush bodies which are arranged for contacting said generally cylindrical commutator of the motor, the commutator having a plurality of circumferential segments and the third and fourth brush bodies being capable of

contacting a single one of said segments simultaneously when the assembly is mounted in the motor; and

said [a] direct current electric motor [having] comprising:

said generally cylindrical commutator, and said third and fourth [the] brush bodies being in contact therewith [assembly according to claim 54].

H5 Cond.

65. (Amended) A brush assembly as in claim 64, wherein said third and fourth brush bodies, having said different resonant frequencies, remain in [enable the third and fourth brushes to provide] reliable electrical contact between said third and fourth supports and said commutator, thereby [by] reducing interface resistance between the brushes and the commutator, despite oscillations of said supports and brushes which occur in response to rotation of said commutator.

H6 Sub J1 cont.

72. (Amended) An electric motor brush assembly mounted in a DC electric motor, said brush assembly comprising:

first and second resilient, electrically conductive brush supports, the supports carrying respective first and second brushes which are thereby arranged for contacting a generally cylindrical commutator of the motor;

the supports being mounted to a common base which is spaced from a longitudinal axis of the motor and the brushes extending toward a common circumferential region of said commutator;

said first support and brush having a first resonant frequency, said second support and brush having a second resonant frequency, and said first and second resonant frequencies being different;

wherein a portion of said first support has a different resiliency than a corresponding portion of said second support for causing said first frequency to be different from said second frequency;

H7 Sub J1 cont.

H7 Cond. Sub J1 cont.

[A brush assembly as in claim 71,] wherein said portions of said supports are made of different resilient materials, thereby having said different resiliencies.

H8

~~74. (Amended)~~ An electric motor brush assembly mounted in a DC electric motor, said brush assembly comprising:

first and second resilient, electrically conductive brush supports, the supports carrying respective first and second brushes which are thereby arranged for contacting a generally cylindrical commutator of the motor;

the supports being mounted to a common base which is spaced from a longitudinal axis of the motor and the brushes extending toward a common circumferential region of said commutator;

said first support and brush having a first resonant frequency, said second support and brush having a second resonant frequency, and said first and second resonant frequencies being different;

wherein a portion of said first support has a different resiliency than a corresponding portion of said second support for causing said first frequency to be different from said second frequency;

[A brush assembly as in claim 71,] wherein one of said portions has ~~a slot~~ an aperture formed therein, said ~~slot~~ aperture providing [which provides] said different resiliencies.

I

H9 Sub J1 cont.

76. (Amended) A brush assembly as in claim ~~59~~ 72, wherein said first and second brush bodies, having said different resonant frequencies, remain in [enable the first and second brushes to provide] reliable electrical contact between said first and second supports and said commutator, thereby [by] reducing interface resistance between the brushes and the commutator, despite oscillations of said supports and brushes which occur in response to rotation of said commutator.

H10 Sub J6

78. (Amended) In combination, an electric motor brush assembly and a DC motor, said brush assembly comprising:

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first and second resilient, electrically conductive supports arranged for being mounted in the motor, the supports carrying respective first and second brushes which are thereby arranged for contacting a commutator of the motor when the assembly is mounted in the motor;

the supports being axially spaced from each other along said axis of said motor and the supports having substantially equal lengths;

said first support and brush having a first resonant frequency, said second support and brush having a second resonant frequency, and said first and second resonant frequencies being different; and

said [a] direct current electric motor [having] comprising:

said commutator, said commutator [communication] being generally cylindrical, and said first and second brushes of the brush assembly being in contact therewith [according to claim 77].

REMARKS

This is responsive to the Office Action dated March 2, 1998.

Some of the claims are being amended herein to improve their form, but no substantive amendments are necessary to respond to the Office Action, and none are being made.

Allowable Claims

Claims 48, 50, 72 and 74 were found to recite allowable subject matter. Each of these claims has been placed in independent form and therefore they are requested to be allowed.

Drawing Objections

The drawings were objected to under 37 C.F.R. 1.83(a). This drawing objection is requested to be held in abeyance, although allowable subject matter has been indicated. There is still the possibility of cancellation or amendment of some of the